The EHR Response
To the Committee of Visitors (COV) Report
Robert Noyce Teacher Scholarship Program

COV Meeting of October 31 – November 1, 2011

On October 31 – November 1, 2011, a Committee of Visitors was convened to review the Robert Noyce Teacher Scholarship Program for the period of FY 2008–2010. The program staff thanks the COV members for their thorough review of the program and helpful suggestions. This response addresses the comments and issues that were included in the COV report. Responses are organized in accordance with the order provided by the FY 2011 Report Template B for NSF Committees of Visitors.

1.   Quality and Effectiveness of Merit Review Process

I.2 COV Recommendation: The COV recommends consideration be given to specifying program-specific criteria in the review template to enhance targeted responses.

Program Response:
Although program-specific criteria are provided in the solicitation, in the Instructions to Reviewers and in the Reviewer Webinars held approximately three weeks before the panel meeting, individual reviewers may focus on the specific criteria that are most relevant to their own expertise or may choose to emphasize specific criteria that are particularly strong or particularly weak in the proposal under review. The specific review criteria are not meant to be used as a checklist by reviewers, but rather to serve as a guide for both the Principal Investigator (PI) and the reviewers. The template that reviewers must use to submit reviews to FastLane is generic to enable its use for all programs at NSF and cannot be modified for individual programs. We will continue to make sure reviewers are aware of all program-specific review criteria.

I.4 COV Comments: In some cases, the COV observed items that concerned them:

- In many of the panel summaries, elements of discussion were captured, but others seemed similar to individual reviews.
- The process of rotating the responsibility for writing panel summaries may lead to the highly variable nature of those summaries.
- It may be difficult to reflect in the summary those perspectives that represent a particular panelist's expertise.

Program Response:
The program acknowledges the variability in panel summaries, largely due to different authors. We make an effort to distribute the responsibility for writing panel summaries equitably among all reviewers to reduce the burden on any particular reviewer. Therefore, it would be expected that there would be some variability. The summary

reflects the discussion of the particular proposal during the panel meeting and the comments reflect the collective expertise of the panel without explicit reference to any particular panelist's expertise. Reviewers are cautioned not to include any statements that would reveal their identity. Although reviewers are instructed that the panel summary should reflect the discussion and not reiterate the individual reviews, there is a tendency for reviewers' comments during the discussion to reflect their individual reviews. In those cases, it is likely that no additional issues were revealed during the panel discussion. We will continue to remind scribes that the panel summary should reflect the breadth of the discussion and not just their own review of the proposal.

I.7 COV Suggestions: The COV discussed strategies for improving the quality of reviews by focusing on panel training, orientation, and operation and provided several suggestions.

Program Response:
The Noyce program appreciates these suggestions for improving the quality of reviews and we will consider the feasibility of implementing some of the suggestions as follows:

I.7 COV Suggestions: Enhanced Panel Preparation

- **COV Suggestion:** Mandatory webinar participation, especially for new reviewers. Include samples of helpful and unhelpful review statements.

Program Response:
Reviewers are strongly encouraged to participate in webinars and most new reviewers do. However, it would be impractical to mandate the participation since failure to participate would require replacing a reviewer too close the panel dates. We have offered two or three dates for the webinar to accommodate schedules and we make the slides available on the reviewer website for those who were not able to attend the webinar. We will explore the possibility of developing sample review statements to illustrate the difference between a helpful and an unhelpful review.

- **COV Suggestion:** Provide reviewers (especially new ones) with time estimates for how long it takes to complete reviews.

Program Response:
It is difficult to provide a time estimate since individual reviewers may need more or less time to read a proposal and write a review. However, we do suggest that they begin the process well ahead of the panel dates and all reviewers are told they must complete their written reviews prior to arriving at the panel meeting, although they may modify their reviews at any time during the panel meeting.

- **COV Suggestion**: Facilitate a discussion at least 10 days before the panel convenes to provide feedback on the appropriate level of commentary based on the draft reviews of a selected proposal.

Program Response:

Consideration must be given to individual panelists' schedules. In some cases, it may not be possible for the reviewer to have reviews available 10 days before the panel meeting. In addition, with each reviewer reviewing up to 12 proposals and with four to six reviews per proposal, the number of reviews that each Program Officer would need to critique would require a substantial amount of time. The program will continue to provide sufficient training for reviewers with emphasis on the importance of substantive reviews.

I.7 COV Suggestions: Expanded Responsibilities of the Panel Chair

The Noyce program appreciates these suggestions for improving the quality of reviews and we will consider the feasibility of implementing some of the suggestions:
- **COV Suggestion:** Expanded mentoring role in overseeing the panel review process.

Program Response:

The program expects many panel chairs would welcome a mentoring role; however, that role can be assumed by any of the more experienced reviewers and does not need to be a specific responsibility of the chair, who already has considerable additional responsibilities.

- **COV Suggestion:** Additional recognition for the panel chair being given expanded professional responsibilities

Program Response:

The Noyce program must follow NSF rules and practices regarding the compensation of reviewers, which do not currently permit any additional compensation for the chair.

- **COV Suggestion:** Ensuring that review criteria are met.

Program Response:

We will continue to advise the panel chairs to make sure Intellectual Merit and Broader Impact are addressed in the panel summary. In addition, the Program Officer who is present during the panel meeting will read the summaries to ensure that the panel addresses both review criteria. In some cases, however, there may be different interpretations of how these criteria, as well as the additional review

criteria associated with the Noyce program, are addressed in a given summary or review.

- **COV Suggestion:** Ensuring that all voices are heard (the COV noted the voice of reviewers from K-12 settings tended not to be reflected strongly).

- **COV Suggestion:** Ensuring that areas of reviewer expertise are represented in the individual reviews, summary, and panel discussion.

Program Response:
The chairs are instructed to moderate the discussion so that each reviewer has a chance to contribute to the discussion and all areas of expertise are represented. In addition, the Program Officer also monitors the discussion to ensure all have participated in the discussion. All reviewers who have read the proposal and are not in conflict submit a written review and are expected to participate in the panel discussion that provides the basis for the panel summary. This enables the diverse expertise of the reviewers to be expressed during the panel discussion. The comments during the discussion are not given attribution; therefore, it would be difficult to determine who spoke and who did not speak simply based on the written panel summary.

II.   Selection of Reviewers

II.1a COV Recommendation: The COV recommends that NSF continue its efforts to achieve a balance of institutional diversity on review panels, especially for K-12, baccalaureate, and associates institutions. All panels should have a K-12 member.

Program Response:
Regarding the COV's suggestion that each panel have a school district representative, there is an effort to make sure each panel has K-12 representation, as well as representation across the STEM disciplines, education levels, and from a variety of institutions, including community colleges. The intent is to ensure that each proposal is read by a comparable and inclusive set of reviewers and we will continue to work to achieve that panel composition. Unfortunately, actual panel composition may change if a panelist must cancel at the last minute. In those cases, it is not possible to find a comparable replacement.

II.1b COV Recommendation: The COV recommends a balance of expertise. It was difficult for the COV to tell from the summary table of reviewers who has educational research or teacher education areas of expertise. For example, noting a person's discipline as "mathematics" does not distinguish between mathematics education scholars and mathematicians.

Program Response:
The summary table for reviewers was based on reviewer self-identification selecting from the NSF list of disciplines. This list does not distinguish between mathematics and mathematics education, although a more specific listing can be prepared based on the reviewers' curriculum vitae. Panels are constructed to include a mix of education faculty and STEM discipline faculty.

Additional Comments on reviewer selection

II.3 COV Suggestion: The recruitment of reviewers from associates and K-12 environments may require flexibility with respect to: providing replacement costs to institutions (day substitutes), using distance panels, scheduling summertime panels, etc.

Program Response:
NSF policy does not permit payment for substitute teachers for reviewers. NSF is exploring the use of distance panels. Although this would reduce travel time, it would still require the reviewer to be away from the classroom for at least 1.5 days. Summertime panels are held for some programs; however, the proposal cycle for Noyce requires panels to be held in the Spring to ensure all awards are made during the current fiscal year.

III.   Management of the Program

Program Response:
The Program appreciates the COV's positive comments on the management of the program, responsiveness to emerging research and education opportunities, and program planning and prioritization that guided the development of the portfolio, and responsiveness to previous COV comments and recommendations.

III.4 COV Suggestion: The previous COV noted that a disproportionate number of awards went to doctoral institutions and the current COV noted that this is a pattern that persists, although the situation has improved. There should be continued efforts to broaden the institutional level of representation among the awards.

Program Response:
The program appreciates the comment that the award distribution has improved. Broadening the institutional representation continues to be a priority for the program. We will continue to direct outreach efforts to institution types that are not well-represented in the Noyce portfolio. For example, workshops organized by Quality Education for Minorities provide outreach to minority-serving institutions including HBCUs, Tribal colleges, and Hispanic-serving institutions. Presentations at the National

Association of Community College Teacher Education Programs are designed to target community colleges. In addition, outreach workshops organized by AAAS reach a variety of institutions new to Noyce.

IV. Portfolio review

IV.a COV Comment and Suggestion: Institutional variety was of concern in regard to non-doctoral institutions. Doctoral institutions have been funded at a rate much higher than other types of institutions. Since 2008, the funding rate for doctoral institutions is 66%; 50% for masters institutions, 30% for baccalaureate institutions, and 20% for associates institutions. Although there may be many factors contributing to this outcome, such as number of proposals submitted and sophistication in preparing grant proposals, it is an area of concern. Technical assistance to address the quality of the proposals may help to address the relatively higher declination rate of non-doctoral institutions.

The geographic distribution of awards remains a concern, particularly in the Northwest. Outreach workshops should be continued to increase the array of institutions and geographic areas represented. Leveraging capabilities of distance delivery as a means of supporting mentoring and induction can increase participation in rural areas.

Program Response:
As addressed previously, the program continues to provide outreach workshops directed toward institutional types and geographical areas that are not well-represented in the award portfolio. These workshops include technical assistance focused on proposal writing skills; mock reviews; and, in some cases, one-on-one meetings with Program Officers; and mentoring or practical advice provided by current PIs. While an initial proposal may not be successful, we find that resubmissions have a higher success rate, as would be expected. We will continue to offer outreach workshops as well as webinars for prospective PIs. The program agrees that distance delivery provides opportunities for rural areas to provide mentoring and induction support to teachers and this is evident in many proposals from rural areas.

IV.b COV Suggestions: Based on the data provided, the COV was concerned about the challenge of retaining Noyce teachers beyond their service commitment.
- It is important to encourage projects that create sustainable Professional Learning Communities (PLCs).
- For the Teaching Fellowship/Master Teaching Fellowship (TF/MTF) participants, loss of the salary supplement is tantamount to a salary cut, creating an incentive to find a higher-paying position. Therefore, phasing down stipends after the commitment term may mitigate the effect.
- Another possible strategy is to create non-monetary incentives (such as support for professional development and leadership within districts) during program

participation that increase the likelihood of retention in a high-need school after the service commitment is completed.

Program Response:
The program shares the COV's concern about retaining Noyce teachers beyond their service commitment. It should be noted that limited data on retention beyond the service requirement are available at this time since many Noyce Scholars and Fellows are still in the process of completing their preservice program or completing the teaching requirement.

To address the issue of retention, particularly among novice teachers, there is an emphasis on strong induction programs in the solicitation and this is reflected in the review criteria. In addition, Phase II awards are available for institutions to follow previously funded cohorts to continue to provide induction support and to determine the extent to which the Noyce scholars are teaching beyond their service commitment. Support for professional development and leadership activities for Noyce Scholars and Fellows who are completing the teaching requirement is already provided through grant funds. The annual Noyce conference typically includes sessions on supporting new teachers and the use of Professional Learning Communities is a strategy that is becoming more prevalent in the Noyce community. For example, PLCs might be comprised of preservice students, former Noyce Scholars who are now teaching, master teachers, and IHE faculty.

The loss of the salary supplement for TF/MTF participants is also a concern which the Program will be following. Given that the first TF/MTF awards were made in 2009, there are no TF/MTF projects far enough along for the program to be able to determine the consequences of ending the salary supplement. For example, it is possible that the district might continue to offer a higher salary to the teacher leaders that were supported with NSF funding, based on increased duties and responsibilities as teacher leaders. The COV's suggestions will be helpful if a Phase II award for the TF/MTF track is offered in the future.

Other Topics

1. *Please comment on any program areas in need of improvement or gaps (if any) within program areas.*

1.a COV Suggestions: Regarding retention beyond the service requirement – The COV suggests probing this trend further to find ways of encouraging Noyce Scholars to remain in high-need districts beyond the service commitment. Further observations and suggestions include the following:
- If data show departures from high-need districts after service commitment, some incentive for remaining should be considered, such as:

- Professional resources, such as travel allotments, professional development support, opportunities to mentor other teachers, etc. These are benefits that might make it attractive to remain in the Noyce teaching assignment beyond the commitment period.
- Reduced stipends for staying beyond commitment (perhaps $5k/yr for up to 4 additional years). This recommendation is intended to address the current situation, where there is a precipitous drop in compensation at the end of the service commitment.

Program Response:
Retention data are limited at this time since it was not part of the original evaluation, which covered the earlier years of the Noyce program, focusing on recruitment and preparation, rather than long-term retention issues. Limited data were available at the time of the COV and do not represent all Noyce Scholars, since PIs are not required to submit data on the participants after they have completed the teaching requirement, although some do even though the grant may have expired. In addition, as mentioned previously, many Noyce Scholars are still completing their preservice program or are in the process of completing their teaching requirement. The new evaluation conducted by Abt Associates will involve a more extensive study of retention since many more Scholars will have completed their teaching requirement during the course of the evaluation study. The COV's suggestions regarding professional development and other opportunities that might encourage Noyce Scholars to remain in teaching are actually being implemented in Phase II projects where the focus is on Noyce Scholars who have begun to teach. The program will consider the possibility of reduced stipends for TF/MTF participants for staying beyond the commitment, but this is subject to any future decision about offering Phase II for TF/MTF projects.

1.b COV Suggestions: Phase II projects should be collecting data to help inform decision-making about how talent might be retained. Some important data elements include:
- Characteristics of those who are leaving vs. those who are staying in high-need districts.
- Reasons given for leaving high-need districts and possible incentives to stay.
- Analysis of premature departures to determine reasons more clearly.

Program Response:
The program agrees with these suggestions, which are appropriate for Phase II projects and are typically included in their evaluation efforts. These elements are also being explored by the program evaluators.

1.c COV Suggestions: Opportunities for Noyce Scholar leadership might be connected to service post-commitment. This strategy raises some questions:
- What would this mean for the grantee, in terms of administrative oversight? How might that commitment be compensated, if at all?

- Would institutions be willing to extend their monitoring of graduated Noyce Scholars beyond current requirements?

Program Response:
The COV raises important questions about the feasibility of providing opportunities for Noyce Scholars teaching beyond their commitment. Within the finite period of the award, there is a limit to how support can be extended. However, this is feasible and present in Phase II awards whose earlier cohorts have begun to teach and, in some cases, may have completed their service requirement. Any longer term studies of retention and provision of continuing support beyond the teaching requirement would require additional funding beyond a Phase II award, which is not currently available.

1.d COV Recommendation: The COV recommends that consideration be given to tracking Noyce Scholars well beyond the service commitment. The COV thought it would be useful to know what is happening to Noyce Scholars five to ten years after participation (i.e., whether they remain in a STEM-related career).

Program Response:
The program agrees this is of interest. There is an ongoing evaluation designed to study retention beyond the service requirement. This study encompasses projects beginning with the 2003 cohort through the 2009 cohort. Studies are also being conducted under Phase II grants. Long-term (10 years post) would require additional funding beyond what is available under Phase II and could be incorporated into future program evaluation or research studies.

1.e COV Recommendation: The COV recommends that in the next phase, the program capture "stories from the field," as a model for improving practice. STEM teachers could be encouraged to interact around common themes – online, for example – to create a space for discussing STEM teaching and learning topics. Use of social media helps to leverage the benefit of Noyce Scholars as brain trusts, leaders, recruiters, and commentators on the program.

Program Response:
Noyce Scholars on Facebook, the Noyce website, and Noyce conferences all provide vehicles for capturing "stories from the field". The program agrees the use of social media provides a rich environment for leveraging the knowledge and experiences of the Noyce community of teachers.

1.f COV Recommendation: The COV suggests that the Abt evaluation scope should be extended to include qualitative information on retention and lessons learned to inform discussion about retention. Such information would enable the program to understand better the issues around retention that seem a natural next phase of work.

Program Response:

As noted above, this is an area that the Abt evaluation will be pursuing through surveys of Noyce Scholars.

1.g COV Recommendations:
- The COV recommends strengthening the language and requirements for collaboration with community colleges to ensure that such relationships are truly meaningful.
- The COV recommends that the guidelines for the scholarship track and planning grants be modified to include community colleges as partners.

Program Response:
As noted by the COV, community college students who are undergraduates, are not eligible for Noyce scholarships, unless the community college actually offers a bachelor's degree program for STEM majors, since there is a requirement that students receiving Noyce scholarships must be at least in the junior year. However, the summer internship component for freshmen and sophomores is available for community college students, and projects involving community colleges include that opportunity. The solicitation provides incentives for including community college partners and this has led to an increase in the number of named community college partners, while also providing funds to support that partnership. The program believes that this incentive, coupled with outreach to community colleges and the requirement that proposals including community college partners involve these institutions in a substantial way, will lead to greater participation of community colleges in all tracks.

It should also be noted that community colleges may support post-baccalaureate students in alternative certification programs and two community colleges currently serve as the lead institution for this type of project. Unlike S-STEM, where students seeking an associate's degree may receive scholarships, the Noyce program requires the completion of a teacher certification program and a bachelor's degree is required for such certification. Therefore, a two-year college that does not offer a bachelor's degree in a STEM discipline would need to partner with a four-year institution if their focus is on preparing undergraduates to become teachers. Since the lead institution has the responsibility of tracking the students who graduate from the teacher preparation program, a community college may be reluctant to take on the responsibility of tracking students who have graduated from another institution.

1.h COV Recommendation: The COV recommends strengthening the language and requirements for collaboration with school districts.

Program Response:
The program agrees that meaningful partnerships with school districts are important aspects of the Noyce projects. The solicitation states that proposals should include the following in the project description: "Evidence of functioning partnerships between

institutions of higher education and school districts". In addition, proposals are expected to provide letters of support from school districts. This aspect is further addressed during negotiations, if additional information is needed. We will stress this component in future outreach sessions and will consider adding this to the review criteria specific for Noyce to further emphasize the importance of the school district partnerships. To assist current projects in maintaining strong partnerships with school districts, the Noyce Conference includes sessions on partnerships with school districts featuring exemplary partnerships in Noyce projects. A publication that highlights some of the partnerships presented at recent Noyce Conferences is in preparation.

1.i COV Suggestion: Ensuring that Noyce applicants and recipients have access to such projects, including MSP, REESE, DR K12, etc., will strengthen the Noyce program. Conversely, what is learned in the Noyce program should be communicated to grantees and applicants in those other programs, especially as a means to extend the usefulness of information obtained from Phase II projects.

Program Response:
The Program agrees it is important for Noyce projects to have access to other EHR programs. We will continue to make PIs aware of other opportunities as well as the findings from other programs. Through institutional or PI overlap among the programs, as well as participation in national conferences, there is an inevitable awareness of MSP, REESE, and DR K12 projects within the Noyce community. The award of supplements to MSP projects in 2008, provided an opportunity for the two programs to collaborate and has stimulated the submission of proposals by Noyce PIs to the MSP program and vice versa. Noyce PIs seeking to expand their research efforts are encouraged to consider the REESE and DR K12 programs. To the extent possible, we will consider ways in which to expand PI conferences to include PIs from other programs. Program websites provide further opportunities for information exchange and networking across programs.

3. *Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.*

3.a COV Recommendations:
- Program Review Process: The COV recommends that the structure of program review process (recruitment, training, and chair orientation) be modified to build capacity in reviewers to do more thoughtful reviews. To accomplish this, the COV recommends the following:
  - The training webinar prior to panels should be mandatory and not optional, at least for new reviewers.
  - The role of the panel chair should be expanded to help cultivate higher quality reviews through individual feedback to panelists. One or two preliminary reviews could be conducted before the panel convenes to give feedback on the appropriate type and level of

reviewer commentary. This approach might be especially helpful to the large number of new reviewers recruited for each panel.
- o With a limited amount of time to review proposals, perhaps consider more substantive reviews within the area of expertise, rather than the current model of comprehensive reviews from all reviewers. Such in-depth reviews may be of greater use to the PI.

- Additional Review Criteria: The COV recommends modifying the proposal review template to include a block for "additional criteria," to be sure that such information (if applicable) is captured during the review.

Program Response:
These recommendations have been addressed under previous sections.

4. Please provide comments on any other issues the COV feels are relevant.

COV Recommendation: The COV recommends that the next COV have information about whether partner districts are urban, suburban, or rural.

Program Response:
The program will provide this information to the next COV.

5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

COV Recommendation: The COV recommends a discussion among the COV members prior to convening, to promote early and clear organization of the work. In addition, a matrix of template items might be a helpful tool for working through the template.

Program Response:
The Program provided contact information and encouraged the COV members to plan their work in advance. However, depending on the individual schedules of COV members, we understand this may not always be possible. The template was a new template introduced throughout NSF in 2011 and this feedback will be useful to the program in working with future COVs. Program staff will be available to facilitate any additional pre-COV communications through teleconferencing or other media, should future COVs request this.

COV Recommendation: Selected proposals should be screened to ensure that all types of institutions are included, including those that have low rates of proposal submission.

Program Response:
Proposals were randomly selected in order to keep the sample size manageable for the COV's work. The sample included all types of institutions (Baccalaureate, Masters,

Doctoral and Associates), closely reflecting the institutional representation in the full collection of proposals received over the period of COV review. Community colleges had the lowest rate of submission over the FY 2008 – 2010 period and one proposal was included in the sample. The sample selection process was made available to the Chair in advance and all COV members were able to review the selected jackets and documents almost three weeks prior to the COV. In the future, the program will continue to remind COV members that all jackets are available upon request, and we will be glad to accommodate requests for additional jackets.